Tonnesen, Gail [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP From:

(FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=74A573ADAC664C25B77C5B4DAE45A54C-TONNESEN, GAIL]

Sent: 3/10/2017 5:59:25 PM

Ralph Morris [rmorris@ramboll.com]; Kevin Briggs [kevin.briggs@state.co.us] To:

Subject: Re: International Emissions Contributions

Attachments: image002.jpg; image003.png

I don't have a strong opinion - I would be inclined to make the box smaller to exclude more of the offshore shipping, given that these emission are probably not controllable by states. But I also think it is fine to use the large box in your map, and include a statement that there is still some contribution from off shore shipping.

thanks, Gail

From: Ralph Morris <rmorris@ramboll.com> Sent: Thursday, March 9, 2017 6:32 PM To: Tonnesen, Gail; Kevin Briggs

Subject: FW: International Emissions Contributions

Gail and Kevin,

For the no international emission GEOS-Chem run we are doing for RAQC we need to decide how far off the coast we should retain aircraft and shipping emissions as being part of the U.S. Ken suggested I get your two opinions on the proposed map below. I don't think it will make a big difference. Reminder that we are just talking about aircraft band shipping emissions in this case.

Your prompt reply would be appreciated as we are a little behind on this task.

Ralph

From: Ken Lloyd [mailto:klloyd@raqc.org] Sent: Thursday, March 9, 2017 2:30 PM To: Ralph Morris; Amanda Brimmer

Subject: RE: International Emissions Contributions

As a non-modeler, I really don't have any basis to give any technical input, even on a subjective decision. I suggest we run this by Kevin Briggs and Gail Tonneson to get their input.

From: Ralph Morris [mailto:rmorris@ramboll.com] Sent: Thursday, March 09, 2017 1:38 PM

To: Amanda Brimmer; Ken Lloyd

Subject: International Emissions Contributions

Amanda and Ken,

For the GEOS-Chem no non-US anthropogenic emissions sensitivity test we can turn off all non-US anthropogenic emissions pretty easily except for aircraft and shipping.

For aircraft and shipping we need to define a box around the U.S. to tell GEOS-Chem where to zero-out the emissions (non-US) and where to leave the emissions in (US). After looking at how the GEOS-Chem modelers (looking n~400 km from US coastline) have done their U.S. Background (USB) ozone runs (a similar although reversed exercise where just US anthropogenic emissions are eliminated) they suggest the box below where we would zero out all aircraft and shipping emissions outside of the box.

As this is a subjective decision I wanted to get your input on it.

Ralph

[cid:image002.jpg@01D298EA.0DD41DE0]

Sincerely, Ralph Morris Managing Principal D +1 415 8990708 M +1 415 7132840 F +1 415 8990707

rmorris@ramboll.com<mailto:rmorris@ramboll.com>

Ramboll Environ
773 San Marin Drive
Suite 2115
Novato, CA 94998
USA
www.ramboll-environ.comhttp://www.ramboll-environ.com/

[Ramboll_Environ_Logo]